

Inventions & Innovation Project Abstract

Plant Phenotype Characterization System

The ability to analyze plant root structure and function in a timely, cost efficient manner is critical to meeting DOE Biomass Program goals. There is no existing high throughput technology today that supports plant root characterization. The objective of Phenotype Screening Corporation is to develop a high-throughput, nondestructive, noninvasive root characterization system based upon low-voltage digital x-ray radiography. In order to meet our objective we will develop special plant substrate material, plant containers, and x-ray radiography image processing algorithms.

Initial proof of concept work has shown that they can grow plants in low density polymer substrates and containers suitable for low energy x-ray radiographic imaging. The project will primarily enable “output trait” and “value-added trait” transgenic products. The effect of the application of this technology will be to accelerate progress in a wide range of genetic modification programs, of which biomass is one. Phenotype Screening Corporation believes that research acceleration can produce overall improvements in the range of 30 percent.



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